

AMENDMENTS TO THE CLAIMS

This listing of the claims will replace all prior versions and listings of claims in the application:

1. (currently amended) A drill guide comprising:
a guide barrel for receiving a bone tool for creating a hole in bone; and
an alignment assembly associated with the guide barrel for aligning the bone tool with a selected first or second fastener hole of a bone plate, the alignment assembly comprising a location post configured to be at least partially received within a recess in the bone plate;
wherein the guide barrel is not pivotable relative to the alignment assembly; and
wherein the location post is pivotable about the bone plate recess to allow the guide barrel to be selectively aligned with the first and second fastener holes.
2. (original) The drill guide of claim 1, wherein the location post is configured to axially lock the drill guide to the bone plate.
3. (original) The drill guide of claim 2, wherein the location post further comprises a plurality of resilient finger elements configured to frictionally engage the bone plate recess to thereby axially lock the drill guide to the bone plate.
4. (original) The drill guide of claim 3, wherein the resilient finger elements further comprise at least one ridge configured to engage threads in the bone plate recess.
5. (original) The drill guide of claim 1, the alignment assembly further comprising a housing having a first axial bore configured to slidably receive at least a portion of the location post.
6. (original) The drill guide of claim 5, the location post and housing further each comprising a distal end, the location post having a retracted position in which the location post distal end is located a first distance from the distal end of the housing, and an extended position in which the location post distal end is located a second distance from the distal end of the housing, wherein the second length is greater than the first length.
7. (original) The drill guide of claim 6, the alignment assembly further comprising a spring element disposed at least partially within a second axial bore in the housing to bias the location post to the extended position.

8. (original) The drill guide of claim 7, the guide barrel further comprising a bore with a bore axis, and a distal plate-engaging end, wherein the distal plate-engaging end comprises a nose portion configured to be received within the first or second fastener hole to align the bore with the bone screw hole.
9. (original) The drill guide of claim 8, wherein the nose portion comprises a conical shape.
10. (original) The drill guide of claim 8, the housing first axial bore and the guide barrel bore forming an acute angle therebetween.
11. (original) The drill guide of claim 7, wherein when the location post is received within the bone plate recess and the location post is in the extended position, the guide barrel distal end is located a first distance from the top surface of the bone plate.
12. (original) The drill guide of claim 7, wherein when the location post is received within the bone plate recess and the location post is in the retracted position, the guide barrel distal end contacts the selected bone screw hole.
13. (original) The drill guide of claim 1, the drill guide further comprising a handle associated with the guide barrel, the handle configured to be selectively rotatable with respect to the guide barrel in a first plane.
14. (original) The drill guide of claim 13, wherein the first plane is substantially perpendicular to the longitudinal axis of the guide barrel bore.
15. (original) The drill guide of claim 13, further comprising a handle swivel assembly having a locked position in which the handle can not rotated with respect to the guide barrel, and an unlocked position in which the handle is freely rotatable with respect to the guide barrel.
16. (original) The drill guide of claim 15, wherein the swivel assembly comprises at least one non-metallic bearing.
17. (original) The drill guide of claim 15, wherein the swivel assembly comprises a drain hole configured to allow fluid to drain from the assembly subsequent to sterilization of the drill guide.

18. (original) The drill guide of claim 1, wherein the location post is axially fixed to the alignment assembly.

19. (currently amended) A surgical drill guide comprising:

a handle,

a guide barrel having a length, and a proximal end associated with the handle and a distal end configured to engage an inner surface of a fastener hole of a bone plate, the guide barrel further comprising a bore configured to receive a bone cavity forming tool; and

an alignment assembly associated with the guide barrel for aligning the bone tool with a selected first or second fastener hole, the alignment assembly comprising a location post configured to be at least partially received within a recess in the bone plate, and having a length;

wherein the guide barrel has a substantially different length than the alignment assembly; and

wherein the location post is pivotable within the recess to allow the guide barrel to be selectively aligned with the first and second fastener holes so that the tool may be extended through the guide barrel to form a cavity in a bone underlying the selected fastener hole.

20. (original) The drill guide of claim 19, wherein the location post is configured to axially lock the drill guide to the bone plate.

21. (original) The drill guide of claim 20, wherein the location post further comprises a plurality of resilient finger elements configured to frictionally engage the bone plate recess to thereby axially lock the drill guide to the bone plate.

22. (original) The drill guide of claim 21, wherein the resilient finger elements further comprise at least one ridge configured to engage threads in the bone plate recess.

23. (original) The drill guide of claim 19, the alignment assembly further comprising a housing having a first axial bore configured to slidably receive at least a portion of the location post.

24. (original) The drill guide of claim 23, the location post having a retracted position in which a first length of the location post is received within the bore and an extended position in which a second length of the location post is received within the bore, wherein the first length is greater than the second length.

25. (original) The drill guide of claim 24, the alignment assembly further comprising a spring element disposed at least partially within a second axial bore in the housing to bias the location post to the extended position.
26. (original) The drill guide of claim 25, the guide barrel further comprising a bore with a bore axis, and a distal plate-engaging end, wherein the distal plate-engaging end comprises a nose portion configured to be received within the first or second fastener hole to align the bore with the bone screw hole.
27. (original) The drill guide of claim 26, wherein the nose portion comprises a conical shape.
28. (original) The drill guide of claim 26, the housing first axial bore and the guide barrel bore forming an acute angle therebetween.
29. (original) The drill guide of claim 25, wherein when the location post is received within the bone plate recess and the location post is in the extended position, the guide barrel distal end is located a first distance from the top surface of the bone plate.
30. (original) The drill guide of claim 25, wherein when the location post is received within the bone plate recess and the location post is in the retracted position, the guide barrel distal end contacts second bone screw hole.
31. (original) The drill guide of claim 19, the drill guide further comprising a handle associated with the guide barrel, the handle configured to be selectively rotatable with respect to the guide barrel in a first plane.
32. (original) The drill guide of claim 31, wherein the first plane is substantially perpendicular to the longitudinal axis of the guide barrel bore.
33. (original) The drill guide of claim 31, further comprising a handle swivel assembly having a locked position in which the handle can not rotated with respect to the guide barrel, and an unlocked position in which the handle is freely rotatable with respect to the guide barrel.
34. (original) The drill guide of claim 33, wherein the swivel assembly comprises at least one non-metallic bearing.

35. (original) The drill guide of claim 33, wherein the swivel assembly comprises a drain hole configured to allow fluid to drain from the assembly subsequent to sterilization of the drill guide.
36. (original) The drill guide of claim 19, wherein the location post is axially fixed to the alignment assembly.
37. (currently amended) A drill guide assembly comprising:
a guide barrel having a tool receiving portion comprising a longitudinal bore having a bore axis, and an ~~aligning~~ alignment assembly portion;
an ~~aligning~~ alignment assembly comprising a guide barrel engaging portion, a housing and a location post having a post axis, wherein the housing is integral with the guide barrel,
a bone plate having at least two bone screw holes and a positioning recess, the positioning recess configured to receive at least a portion of the location post, the center of the positioning recess being separated from the center of at least one of the bone screw holes by a first distance,
wherein the bore axis is located a second distance from the location post axis, the first and second distances being substantially equal so that when the location post engages the bone plate recess, the bore is substantially coaxial with the at least one fixation hole.
38. (original) The surgical drill guide assembly of claim 37, further comprising a handle member associated with a proximal end of the guide barrel.
39. (original) The surgical drill guide assembly of claim 38, wherein the handle member is pivotable in relation to the guide barrel.
40. (original) The surgical drill guide assembly of claim 37, wherein the guide barrel has at least one depth stop surface configured to coact with a corresponding stop surface of a bone cavity forming tool when the tool is received within the bore to prevent the tool from passing completely through the guide barrel bore.
41. (original) The surgical drill guide assembly of claim 39, the handle further having a locked position in which the handle is rotationally coupled to the guide barrel, and an unlocked position in which the handle is freely rotatable with respect to the guide barrel.
42. (original) The surgical drill guide assembly of claim 41, further comprising:

a locking button having an actuation end and a locking end, the locking end having at least one radial projection, the button further having an unactuated position and an actuated position;

the handle comprising a bore configured to slidably receive at least a portion of the button, the bore further comprising a radial recess configured to receive the radial projection; and

a handle extension having a handle engaging end and a guide barrel engaging end, the handle engaging end having at least one radial groove configured to receive the radial projection;

wherein when the handle is in the unactuated position, the radial projection engages the radial recesses of the handle bore and the handle extension to configure the handle in the locked position.

43. (original) The drill guide of claim 42, wherein when the handle is in the actuated position, the radial projection engages the radial recess of only one of the handle bore and the handle extension to configure the handle in the unlocked position.

44. (original) The drill guide of claim 42, the location post further comprising a plate engaging end having a plurality of resilient fingers configured to axially lock the drill guide to the bone plate when the location post is engaged with the recess.

45. (cancelled) The drill guide of claim 44, the location post plate engaging end having at least one circumferential ridge configured to engage a bottom surface of the bone plate when the location post is engaged with the recess.

46. (currently amended) A drill guide assembly comprising:

a guide barrel having a tool receiving portion comprising a longitudinal bore having a bore axis, and an ~~aligning~~ alignment assembly portion;

an ~~aligning~~ alignment assembly comprising a guide barrel engaging portion, a housing and a location post having a post axis, wherein the housing is integral with the guide barrel,

a bone plate having at least two fastener receiving holes and a drill guide positioning recess, the recess configured to receive at least a portion of the location post, the center of the recess being separated from the center of at least one of the bone screw holes by a first distance,

wherein the bore axis is located a second distance from the location post axis as measured between the distal ends of the guide barrel and the location post, the first and second distances being substantially unequal so that when the location post engages the bone plate recess, the bore is not coaxial with the at least one fixation hole.

47. (original) The drill guide assembly of claim 46, wherein the difference between the first and second distances is from about 0 millimeters (mm) to about 0.8 mm.

48. (original) The drill guide assembly of claim 46, wherein the second distance is about .05 mm longer than the first distance.

49. (cancelled) A method for drilling a hole in bone, comprising the steps of:
providing a bone plate having at least a first pair of fastener receiving holes and a drill guide aligning recess;
applying the plate to the bone surface;
providing a drill guide having a guide bore for receiving a tool and an alignment mechanism associated with the guide bore and including a location post having a proximal alignment mechanism engaging end and a distal plate engaging end;
inserting the plate engaging end of the location post into the recess in the bone plate,
rotating the location post within the recess in the bone plate to align the guide bore with a first selected one of the pair of fastener receiving holes;
inserting and advancing a tool through the guide bore to contact the bone surface underlying the selected fastener receiving hole; and
applying rotational and/or axial force to the tool to creating a cavity in the bone underlying the selected fastener receiving hole.

50. (cancelled) The method of claim 49, wherein the alignment mechanism further comprises a spring element to bias the location post distally axially away from the alignment mechanism, the guide bore further comprising a distal end adjacent the distal end of the location post, the guide bore distal end comprising a conical nose portion configured to engage an inner surface of at least one of the pair of fastener receiving holes, wherein the step of aligning the guide bore with a selected one of the pair of fastener receiving holes further comprises engaging the guide bore nose with the inner surface of the at least one of the pair of fastener receiving holes.

51. (cancelled) The method of claim 49, further comprising the step of rotating the location post within the hole, slot, or indentation in the bone plate to align the guide bore with the second one of the pair of fastener receiving holes; inserting and advancing the tool through the guide bore to contact the bone surface underlying the second fastener receiving hole; and applying rotational and/or axial force to the tool to create a cavity in the bone underlying the second fastener receiving hole.

52. (cancelled) The method of claim 51, wherein the tool is an awl, drill or tap.

53. (cancelled) The method of claim 51, further comprising the steps of disengaging the location post from the recess in the plate to disassociate the drill guide from the bone plate, inserting a bone fastener through one of the first and second fastener receiving holes and into the cavity in the bone underlying the fastener receiving hole, and engaging the fastener with the fastener receiving hole and the bone to fix the plate to the bone.

54. (cancelled) The method of claim 49, wherein the drill guide bore and alignment mechanism are offset from each other so that when the location post is rotated within the bone plate recess to align the guide bore with a first selected one of the pair of fastener receiving holes, the guide bore axis is offset from the center of the fastener receiving hole.

55. (cancelled) The method of claim 54, wherein the steps of inserting and advancing a tool through the guide bore to contact the bone surface underlying the selected fastener receiving hole; and applying rotational and/or axial force to the tool to creating a cavity in the bone underlying the selected fastener receiving hole comprise creating a cavity having an axis that is not collinear with the axis of the fastener receiving hole.

56. (new) A drill guide comprising:

a guide barrel for receiving a bone tool for creating a hole in bone; and

an alignment assembly associated with the guide barrel for aligning the bone tool with a selected first or second fastener hole of a bone plate, the alignment assembly comprising a location post configured to be at least partially received within a recess in the bone plate; wherein the location post is pivotable about the bone plate recess to allow the guide barrel to be selectively aligned with the first and second fastener holes;

the alignment assembly further comprising a housing having a first axial bore configured to slidably receive at least a portion of the location post.

57. (new) The drill guide of claim 56, the location post and housing further each comprising a distal end, the location post having a retracted position in which the location post distal end is located a first distance from the distal end of the housing, and an extended position in which the location post distal end is located a second distance from the distal end of the housing, wherein the second length is greater than the first length.

58. (new) The drill guide of claim 57, the alignment assembly further comprising a spring element disposed at least partially within a second axial bore in the housing to bias the location post to the extended position.

59. (new) The drill guide of claim 58, the guide barrel further comprising a bore with a bore axis, and a distal plate-engaging end, wherein the distal plate-engaging end comprises a nose portion configured to be received within the first or second fastener hole to align the bore with the bone screw hole.

60. (new) The drill guide of claim 59, wherein the nose portion comprises a conical shape.

61. (new) The drill guide of claim 59, the housing first axial bore and the guide barrel bore forming an acute angle therebetween.

62. (new) The drill guide of claim 58, wherein when the location post is received within the bone plate recess and the location post is in the extended position, the guide barrel distal end is located a first distance from the top surface of the bone plate.

63. (new) The drill guide of claim 58, wherein when the location post is received within the bone plate recess and the location post is in the retracted position, the guide barrel distal end contacts the selected bone screw hole.